

DISCOVERY OF FEMALE *APOZYX* (HYMENOPTERA: APOZYGIDAE)
AND COMMENTS ON ITS TAXONOMIC POSITION

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Abstract.—Previously unknown, the female of *Apozyx penyai* Mason (Apozygidae) is found to be very similar to the male. Several more males from south-central Chile are reported. A further examination of characters of *Apozyx* shows it to be undoubtedly a member of Ichneumonoidea but not of Microhymenoptera nor Aculeata. Differences between Apozygidae and Braconidae are tabulated.

In the eight years since I described *Apozyx penyai* Mason (Mason, 1978) several more males and a female have been collected in Chile. Additional males have been taken in Nuble (Las Trancas, 5 km E.S.E. of Recinto at 1250 m) in a Malaise trap operated by A. Newton and M. Thayer in Dec. 1982 in *Nothofagus* forest. Later a male and a female were taken in Nahuelbuta National Park, 50 km W. of Angol (12–1500 m, flight intercept trap operated from Dec. 1984 to 17 Feb. 1985 by S. and J. Peck), the site being in *Nothofagus-Araucaria* forest.

Apozyx penyai Mason,
SUPPLEMENTARY DESCRIPTION

Description of male, see Mason (1978).

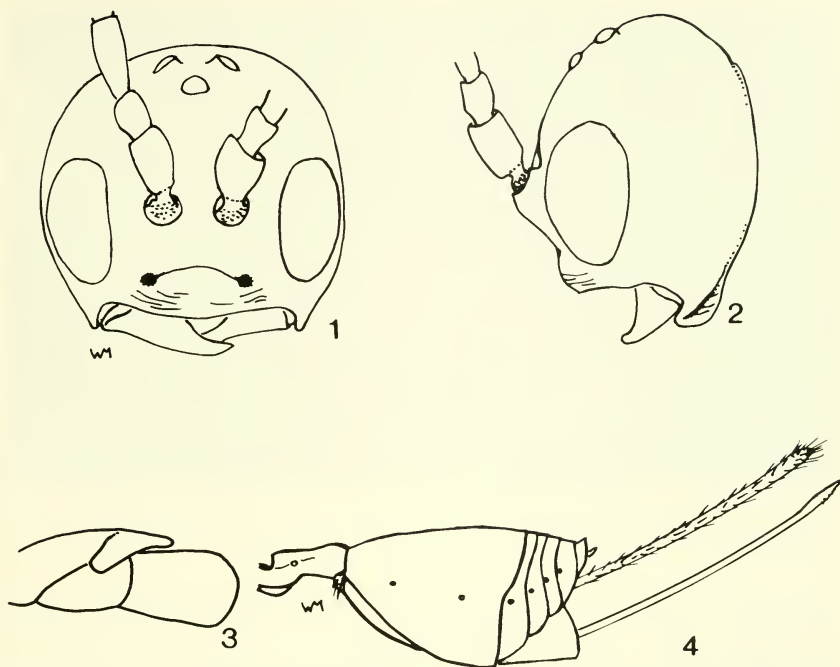
The sexes are very similar except for the large ovipositor (Fig. 4), the stouter flagellar articles, and smaller eyes of the female (Figs. 1, 2).

Abdomen of ♀ (Fig. 4) resembling that of ♂ but hypopygium large and triangular in profile. Ovipositor sheaths hairy, slightly deeper apically, about as long as metasoma; ovipositor weakly and evenly curved upward, uniformly deep except subapically where it is slightly deeper, the apex sharply

pointed and bearing a few small teeth ventrally.

Flagellum of ♀ with 17 articles, about 20% shorter than that of ♂; antipenultimate article 1.4 times as long as wide (in ♂ 2.3–2.8); second article of female 3 times as long as wide (in ♂ 2.5–3.5). Compound eye in ♀ considerably smaller and less protuberant than in ♂ (Figs. 1, 2); thus in dorsal or anterior aspect outer part of the eyes slightly closer than temples (in ♂ eyes bulging distinctly farther apart than temples) and the vertex elevated above top of eyes for a distance almost equal to eye height (in ♂ vertex elevated for a distance about half eye height).

In both sexes second abdominal (first metasomal) sternum including 2 parts: 1, an anterior heavily sclerotized section fused with the tergite into a tubular structure with component parts not easily distinguishable; 2, a small lenticular posterior section formed of 2 subtriangular plates separated medially by narrow membranous area (Figs. 5, 6). During flexion of the part of the abdomen behind tergum 2 this pair of plates overlaps externally the tubular fused tergite and sternite 2. Metasomal terga 1 and 2 articulate laterally by pair of submarginal condyles



Figs. 1-4. *Apozyx penyai*. 1, 2, Head of female, frontal and lateral view. 3, Paramere and volsella, inner side. 4, Female abdomen.

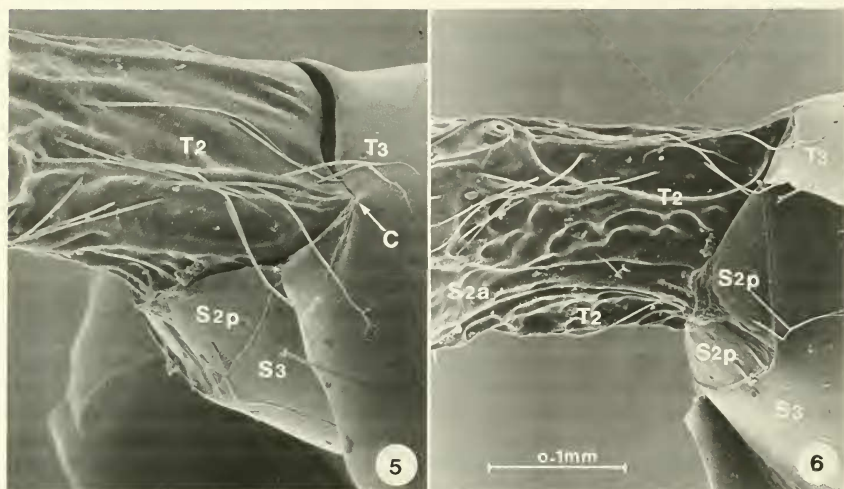
(Fig. 5). Sterna not involved in articulation. Because sterna of holotype could not be counted, original description fails to mention that the metasomal sternites 2 and 3 are fused exactly as their respective tergites. On p. 609, line 9, the terms (2r-m) and (3r-m) should be corrected to (1r-m) and (2r-m) respectively.

Male genitalia (Fig. 3) with weakly expanded and rounded parameres. Cuspis broad, truncate and very short, digitus tapered, extending far beyond cuspis.

DISCUSSION

In 1978, I was uncertain about the placement of this family but studies during intervening years and recent knowledge of the

female anatomy have confirmed my first opinion. *Apozyx* shares the following character states with other Ichneumonoidea: 1, flagellar articles with large longitudinal placodes; 2, mandibles with two apical teeth; 3, pronotum much shorter medially than laterally, the posterodorsal corners touching the tegulae; 4, pronotum (plus prepectus) rigidly attached to the mesoscutum and mesopleuron; 5, posterodorsal corner of pronotum developed into a lobe behind which lies the mesothoracic spiracle; 6, prepectus fused to the posterior vertical pronotal margin, the pit that indicates externally the site of the apodeme bearing the origin of the spiracular occlusor muscle lying very near the posterior margin of the fused



Figs. 5, 6. *Apozyx penyai*, junction of abdominal segments 2 and 3, showing abdominal tergites 2 and 3 (T2, T3), sternites 2 anterior (S2a) and posterior (S2p), sternite 3 (S3), and condyle (C). 5, Anterolateral view. 6, Ventrolateral view.

pronotum plus prepectus (for definition of prepectus and discussion of characters 4–6, see Gibson, 1985); 7, costa and radius of fore wing fused; 8, sternum of metasoma one divided into a heavily sclerotized anterior section and comparatively weakly sclerotized posterior section (Mason, 1981, 1983); 9, metasomal segments 1 and 2 articulated by a pair of sublateral condyles on the hind margin of tergum 1 and anterior margin of tergum 2, the sterna playing no part in the articulation.

The presence in the female of complete metasomal terga 7 and 8, the latter bearing large cerci, eliminates *Apozyx* from the Aculeata (Koenigsmann, 1978). The presence of spiracles on each of abdominal tergites 1 to 8 as well as the step-like posterior deflection of fore wing Cu at its junction with m-cu eliminates *Apozyx* from Microhymenoptera because all Microhymenoptera have a comparatively straightened Cu (if it is not reduced to invisibility) and their abdomen has only 2 pairs of spiracles on terga 1 and

8, or only one pair on tergum 1 (propodeum), the other spiracles being absent or vestigial.

The general aspect of *Apozyx* is similar to that of a braconid but there are important differences: 1, in *Apozyx* abdominal sterna 3 and following are rounded and sclerotized as strongly as the terga, a basic condition shared with most other Hymenoptera, whereas the same sterna of Braconidae are extensively soft, membranous and usually divided into several weakly sclerotized plates, a derived condition found only in Braconidae, Ichneumonidae and Paxylomatidae; 2, vein 2r-m (2nd recurrent) is present as a strong tubular vein in the fore wing, a basic condition (Mason, 1981), whereas in Braconidae this vein is missing, a derived condition.

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